Lower limb muscle endurance and muscle strength in children and adolescents with cerebral palsy

Eken, M.M.

2017

document version
Publisher's PDF, also known as Version of record

Children and adolescents with cerebral palsy often have problems in performing activities of daily life, like walking. This might be due to a loss of muscle function, which is commonly assessed as the strength from a single maximal contraction. However, most activities of daily life involve a series of repetitive submaximal contractions. This thesis reports on the ability of children and adolescents with cerebral palsy to perform such series of repetitive contractions, referred to as lower limb muscle endurance. The results of this thesis show that lower limb muscle endurance is considerably reduced in children and adolescents with cerebral palsy and relates to limitations in daily activities and self-reported fatigue, indicating the clinical impact of reduced muscle endurance in this population. Results show that both a laboratory-based repetitions-to-fatigue protocol as well as a field-based squat test can be used to measure lower limb muscle endurance of children and adolescents with cerebral palsy in a clinically meaningful way. This thesis also shows that lower limb muscle endurance of individuals with cerebral palsy is closely related to their maximal muscle strength. Based on this thesis it is advised to consider training of lower limb muscle endurance and strength in the rehabilitation program of children and adolescents with cerebral palsy, which can enhance their mobility and reduce fatigue.

inspired by motion

Freedom of movement in all its aspects determines quality of life – from cell to organ and from organ to the entire body. Our inspiration is substantiated through research into regenerative medicine, rehabilitation and sport.

move research institute amsterdam

founded by VU University Amsterdam, VU University Medical Center Amsterdam and the Academic Centre for Dentistry Amsterdam (ACTA)
www.move.vu.nl

move research institute amsterdam

Lower limb muscle endurance and muscle strength in children and adolescents with cerebral palsy Maaike M Eken

Lower limb muscle endurance and muscle strength in children and adolescents with cerebral palsy

Maaike M Eken